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N^o. XXXIII.

Translation of a Memoir on a new Species of Siren. By
M. de BEAUVOIS.

Read Feb.
19, 1796.

AMPHIBIOUS animals properly so called, so dreadful and hideous to the vulgar, but so different to the eyes of the naturalist to whom all the productions of nature are equally interesting, offer us an infinite scope for discovery. Naturalists therefore not stopped by the thoughtless repugnance of the vulgar to animals infinitely less dangerous than they suppose, and considerably more useful than ignorance (which is continually asking to what purpose are all these things) can imagine; naturalists I say have left us data respecting these beings, which with time, must lead us to a more correct knowledge of, and a more intimate acquaintance with them. The animal to be treated of in this memoir is a proof of what I advance.

In examining Mr. Peale's collection, I had occasion to remark amongst the amphibæ one which I have not seen described by any author. It appeared to me entirely new, and the more interesting as tending to determine our ideas of the Inguana, which has by some been classed amongst the amphibæ, by others with fish; but which we find to be an intermediate class connecting these two.

After having examined, described, and drawn this new animal, Mr. Peale and I have thought proper to speak of it to this Society before the publication of his catalogue which will soon take place.

Linnaeus, the celebrated Linnaeus, whom jealousy is sometimes pleased to criticise generally without cause; Linnaeus whose errors, always exaggerated by his detractors,

tors, are (let my admiration for the merits of this great man excuse the expression) for the greater part marked with a ray of genius; Linnæus I say had formed a separate order of the Inguana (A) discovered in South Carolina by Dr. Garden, since whose death other naturalists amongst whom was Mr. Compfer, (B) have made some new observations respecting it. It was regarded by him, Bonnaterre, (B) and Gmelin the last editor of the works of Linnæus as a fish. The latter naturalist consequently suppressed the order of Meantes; and the *Siren lacertina* is now found placed amongst the *Muræna* under the name of *Muræna Siren*. Although this animal has much analogy to a fish, being furnished with gills, Gmelin has observed that in the formation of them, the Inguana and *Muræna* are distinguishable by the numbers of rays. He therefore supposes it should be placed amongst the branchiolegæ whatever relation it might otherwise have with the *Muræna*.

Such is the last opinion respecting the Inguana (C) of which we will give a description in order that we may compare it with that of the new animal which is principally the object of this memoir.

Description of the Inguana, called Mud Inguana by the Americans, Siren lacertina by Linnaeus, and Muræna Siren by Gmelin.

Head flat at top, rounded at the nose, eyes small, nostrils small and placed near the end of the snout which is sometimes marked with a brown spot, colour chestnut, fig. 1. A B C D.

Mouth furnished with a row of small teeth, fig. 2. Auricular hole nearly in the form of a semicircle, furnished on the exterior with three short, thick fringed lobes adhering to three serrated rays on the interior with opercula, fig. 1. E.

Only two short fore feet, each furnished with four toes terminated each by a small sharp nail, fig. 1. F.

Body nearly round, *shrunken*, and streaked on the sides, covered with small scales thinly spread and faintly seen, fig. 1. G.

Tail flat, furnished both above and below with a simple membrane, without either points or prickles, fig. 1. H.



Description of a New Animal, found in a Swamp in Jersey near the Delaware, not very distant from the Middle Ferry opposite the City of Philadelphia.

HEAD flat, rounded at its extremity, eyes and nostrils as in the former, except that the latter are rather nearer together, fig. 3. A B C D.

Mouth large, extending further back than the eyes, furnished with a row of small teeth as in the former, fig. 3. E.

Auricular hole large, bordered on the upper part by three sharp fringed lobes, adhering at one end to three serrated rays placed in the interior and of which they are a continuation, fig. 3. F.

Under the head two opercula united, forming but one piece, fig. 4. Four feet, those before furnished with four toes, those behind with five. I presume they were furnished with nails, the animal being preserved in spirits of wine has been somewhat changed in its parts, fig. 3. I.

Body somewhat flattened, streaked on the sides, flat-topped above and below; which gives it a square appearance, fig. 3. G.

Tail flat, furnished on the top with a simple membrane, which commences nearly at the neck, and extends itself under the tail as far as the anus, fig. 3. H.

Mr. Peale has preserved the latter animal alive in water for nearly thirty six hours, at the end of which time it died. He observed, that as long as it lived it continued swimming, making use of its feet and principally of its tail; that the lobes which terminate the gills were continually floating and in motion; either, by a power of motion belonging to them, or perhaps rather the effect of the motion which the animal caused with its feet and tail, and which was communicated to all parts of the body. He does not recollect whether the *opercula* opened and closed as in fish, but judging from the conformation of those parts I am led to believe they do not.

As long as the *Inguana* only, was known, incertitude respecting its nature might have placed it rather with fish, to which it is true it bears an affinity by an essential character, gills, than with the *amphibiæ* to which it seems to belong by all the other parts of its body. But now a new individual of the same kind, furnished with four feet like lizards, seems to indicate that it cannot belong to fish.

On this discovery three very important questions arise. I do not flatter myself I shall be able to resolve them, but will endeavour to discuss them and give my opinion.

Are these animals fish? Do they belong to the *amphibiæ*? Or do they form in the order of nature a new intermediate class.

If we form our opinion of the animals we have been describing merely from their gills, there is not a doubt but that we must consider them as fish. Messrs Vicq D'azir and D'Aubenton, ascribe the following characters to fish, That they are furnished with gills which give admittance to the air, that they have not lungs, viscera which are wanting in all oviparous animals, except birds and the *amphibiæ*. But if we judge from the entire conformation of all their parts, can we call those animals fish whose bodies, head, tails, and feet are similar
to

to those of lizards? Can we say with Gmelin that the feet of the *Inguana* are but digitated pectoral fins? and in describing the new animal upon the same principles, shall we call its hind feet digitated abdominal fins? On the other side shall we rank animals whose gills are exactly similar to those of fish with lizards? No. I think that both these opinions would be equally improper; and it appears to me more natural to believe that these animals thus organized, appertaining in a certain degree to each, should form an intermediate and well marked class between lizards and fish. And until more observations be made, and other discoveries of new individuals shall enable us to form this class, I think it would be best to revive the order of *Meantes* established by Linnæus, and improperly suppressed by other naturalists.

It remains to consider whether these animals are of the same, or whether they form between themselves a distinct genus. It is certain that in comparing them, sensible difference may be observed; but these differences appear only specific, and should yield to the common character of having three exterior fringed lobes attached to three serrated interior rays, and feet. I will call the first then, with Linnæus, *Siren Lacertina*, and the other *Siren operculata*.